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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,377	02/04/2008	Nigel Boast	031280-000020	8851

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EXAMINER

MCKANE, ELIZABETH L

ART UNIT	PAPER NUMBER
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1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,377	Applicant(s) BOAST ET AL.	
	Examiner ELIZABETH L. MCKANE	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 August 2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nadkarni (US 2004/0202570) in view of Palermo (US 6,481,219) and Cumberland (WO 03/089017).

Nadkarni teaches a method of sterilizing a closed environment wherein the method includes restricting access to the closed environment (para [0031] and [0042]), generating gaseous ozone into the environment at a concentration of 1-100 ppm (para [0036]), increasing the humidity of the closed environment (para [0028]), maintaining the ozone for a predetermined time period (para [0036] and [0041]), and depleting the ozone using a kiln (para [0041]). Nadkarni further discloses that after "[o]n reaching the

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safe ozone concentration, independent testing company personnel enter the sealed area....” (paragraph [0042]). Thus, there is an inherent step of “signaling” that the safe ozone concentration has been achieved, through detectors or other known means. The safe ozone concentration is disclosed to be “no more than 0.08 ppm.” See para [0036].

As set forth above, Nadkarni discloses the use of ozone having a concentration of 1-100 ppm for an “effective time”. See paragraph [0036]. As both concentration and contact time are known result effective variables, it would have been obvious to one of ordinary skill in the art to optimize a known result effective variable in order to optimize treatment parameters according to economics and contamination level. Optimization of such variables is well-within the purview of one in the art in the absence of unexpected results.

Although Nadkarni discloses destroying the gaseous ozone after treatment with a kiln and/or scrubber, Nadkarni is silent with respect to use of a catalytic converter for destruction of the ozone. Palermo evidences that it was known in the art at the time of the invention to use a catalytic converter for the conversion of ozone back to oxygen at the end of an ozone sterilization cycle. See col.3, lines 9-11. Specifically, Palermo discloses an ozone destroyer **90** which can be a thermal destroyer, like that of Nadkarni, or alternatively a catalytic converter where the catalyst is manganese dioxide or activated carbon. See col.5, lines 24-30. Such catalysts reduce the ozone concentration to less than 1 ppm (col.5, lines 34-36). As Palermo teaches that a catalytic converter is capable of reducing the ozone concentration to very low levels and moreover, is a functional equivalent of the thermal means of Nadkarni, it would have

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been obvious to one of ordinary skill in the art to substitute the catalytic converter of Palermo for the kiln of Nadkarni.

Nadkarni utilizes a portable, truck-mounted apparatus (para [0025]) which is not insertable into the closed environment. Cumberland, however, teaches a portable, wheeled ozone generator for treatment of closed environments. See Figure 1 and page 19, line 34 to page 20, line 16. As Cumberland further discloses that the wheeled cart of Figure 1 is a functional equivalent of a truck-mounted apparatus (page 21, lines 6-7), it would have been obvious to supply the apparatus of Nadkarni on a wheeled cart, in the manner of Cumberland, when treating smaller spaces.

4. Claims 12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nadkarni, Palermo, and Cumberland as applied to claim 11 above, and further in view of Hannant (EP 0693289).

With respect to claim 12, Nadkarni is silent with respect to how the signaling is accomplished. Hannant discloses a sterilization system wherein a remote unit 2 signals the end of the sterilization cycle as well as any fault conditions. See Abstract. The signal can be in the form of a light 25 or other visible display and/or an audible alarm 24. See page 2, line 55 to page 3, line 6. As both visible and audible signals are well-known in the art of sterilization, their use would have been both obvious and expected in the combination above.

As to claims 14 and 15, Nadkarni discloses treatment of "any type of building or vessel such as a ship" (para [0017]). Thus, one of ordinary skill in the art would have

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found it obvious to apply the method of Nadkarni to the treatment of any building/vessel or part thereof in need of sterilization.

With respect to claim 16, while Nadkarni teaches that when the entire building/vessel is being treated the ventilation system can be used to circulate the ozone throughout the building. However, when treating only a single area of the building, it would have been obvious to seal the area, as taught by Nadkarni, and to keep the ventilation system turned off, in order to prevent unwanted circulation of the ozone to parts of the building/vessel outside of the area being treated.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nadkarni, Palermo, and Cumberland as applied to claim 11 above, and further in view of Braun, Jr. (US 2003/0127506).

The combination *supra* teaches the known use of visual signaling means in a sterilization system. LEDs are not specified. However, Braun, Jr. discloses a sterilization system wherein LEDs **50,52** are used to indicate both current state and failure of the system. See paragraphs [0033] and [0040]. As LEDs would have been an well-known type of visual signaling means, their use would have been obvious in the invention of the combination.

6. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nadkarni (US 2004/0202570).

With respect to claim 17, Nadkarni teaches a sterilizer including a humidifier **12**, a gaseous ozone generation means **36**, an ozone depletion means **40**, a movement means **18**, and detectors for the ozone concentration and humidity (para [0015]). With

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respect to a timer, Nadkarni discloses that "selecting the concentration of ozone and time period to kill the spores" (para [0015]) and use of an electrical control panel, it would have been obvious to one of ordinary skill in the art to utilize a timer as part of the control panel for the selection of the treatment time period. Automation of such processes is within the purview of one of ordinary skill in the art.

As to claim 18, any timer is capable of actuating the ozone generation after a delay. This is merely an intended use of the timer.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nadkarni as applied to claim 18 above, and further in view of Palermo.

Although Nadkarni discloses an ozone depletion means (kiln and/or scrubber), the reference is silent with respect to use of manganese dioxide. Palermo evidences that it was known in the art at the time of the invention to use a catalytic converter for the conversion of ozone back to oxygen at the end of an ozone sterilization cycle. See col.3, lines 9-11. Specifically, Palermo discloses an ozone destroyer **90** which can be a thermal destroyer, like that of Nadkarni, or alternatively a catalytic converter where the catalyst is manganese dioxide. See col.5, lines 24-30. Such catalysts reduce the ozone concentration to less than 1 ppm (col.5, lines 34-36). As Palermo teaches that a catalytic converter is capable of reducing the ozone concentration to very low levels and moreover, is a functional equivalent of the thermal means of Nadkarni, it would have been obvious to one of ordinary skill in the art to substitute the catalytic converter of Palermo for the kiln of Nadkarni.

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8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nadkarni and Palermo as applied to claim 19 above, and further in view of Cumberland.

As to system of Nadkarni is truck-mounted, it does not include a handle. Cumberland, however, teaches a portable, wheeled ozone generator for treatment of closed environments having a handle to assist with pushing the apparatus. See Figure 1 and page 19, line 34 to page 20, line 16. As Cumberland further discloses that the wheeled cart of Figure 1 is a functional equivalent of a truck-mounted apparatus (page 21, lines 6-7), it would have been obvious to supply the apparatus of Nadkarni on a wheeled cart, in the manner of Cumberland, when treating smaller spaces.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nadkarni, Palermo, and Cumberland as applied to claim 20 above, and further in view of Hannant.

Nadkarni is silent with respect to a particular signaling means. Hannant discloses a sterilization system wherein a remote unit 2 signals the end of the sterilization cycle as well as any fault conditions. See Abstract. The signal can be in the form of a light 25 or other visible display and/or an audible alarm 24. See page 2, line 55 to page 3, line 6. As both visible and audible signals are well-known in the art of sterilization, their use would have been both obvious and expected in the combination above.

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10. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nadkarni, Palermo, Cumberland, and Hannant as applied to claim 20 above, and further in view of Braun, Jr..

With respect to claim 22, the above combination discloses the known use of visual signaling means in a sterilization system. LEDs are not specified. However, Braun, Jr. discloses a sterilization system wherein LEDs **50,52** are used to indicate both current state and failure of the system. See paragraphs [0033] and [0040]. As LEDs would have been an well-known type of visual signaling means, their use would have been obvious in the invention of the combination.

As to claim 23, Palermo discloses an ozone destroyer **90** which can be a thermal destroyer, like that of Nadkarni, or alternatively a catalytic converter where the catalyst is activated carbon. See col.5, lines 24-30. Such catalysts reduce the ozone concentration to less than 1 ppm (col.5, lines 34-36). As Palermo teaches that a catalytic converter is capable of reducing the ozone concentration to very low levels and moreover, is a functional equivalent of the thermal means of Nadkarni, it would have been obvious to one of ordinary skill in the art to substitute the catalytic converter of Palermo for the kiln of Nadkarni.

Response to Arguments

11. Applicant's arguments with respect to the new claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH L. MCKANE whose telephone number is (571)272-1275. The examiner can normally be reached on Mon-Fri; 5:30 a.m. - 2:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth L McKane/
Primary Examiner, Art Unit 1797

elm
2 November 2009